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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,246	06/09/2006	Tor Bruun	2005_1437A	8839

513 7590 03/03/2011
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EXAMINER

LEO, LEONARD R

ART UNIT	PAPER NUMBER
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3785

NOTIFICATION DATE	DELIVERY MODE
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03/03/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/552,246	Applicant(s) BRUUN ET AL.	
	Examiner Leonard R. Leo	Art Unit 3785	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28,29,31-39 and 41-50 is/are pending in the application.
- 4a) Of the above claim(s) 47,49 and 50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28,29,31-39,41-46 and 48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicants' election of the species of Figure 4.1 in the reply filed on December 13, 2010 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 47 and 49-50 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Regarding claim 47, the recitation "inner openings ... form said second entry/exit point" does not read on the elected Figure 4.1.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 39 and 41-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is an inconsistency between the language in the preamble and the body of the claim, thereby making the scope of the claim unclear. Applicant is required to clarify whether the claim is intended to be drawn to the subcombination or the combination, and amend the claim to be consistent with the intent. In this respect, claims 28-29 recite a manifold system (i.e. a subcombination), whereas dependent claims 39 and 41-46 recite a manifold head incorporated with another further structure and/or use (i.e. combination).

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Claim 41 recites the limitation “end covers” in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

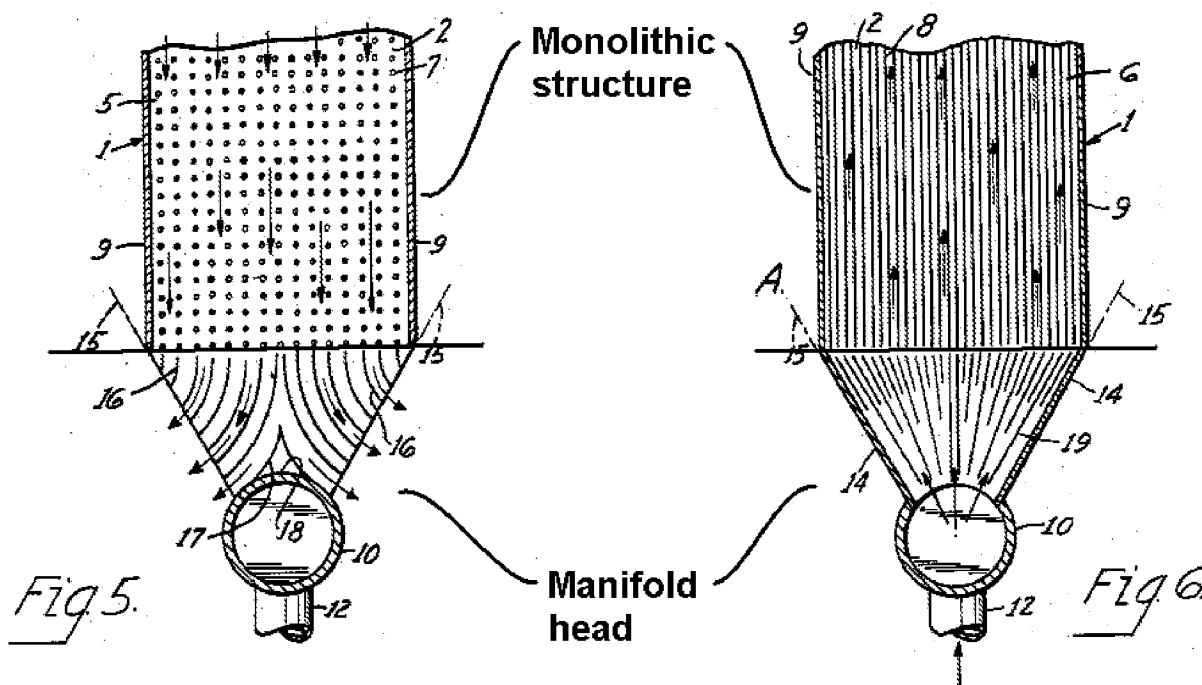
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 28, 38 and 43-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Holm. Figures 5-6 (marked up, next page) discloses a manifold system comprising a multi-channel monolithic structure including outer structure walls 3, 4, 9 and inner structure walls 2 defining a plurality of channels 5, 6 spread over an entire cross-sectional area (Figure 4); a manifold head including a first tunnel 10 (Figure 6) and a second entry/exit point (Figure 5, along planes 15) distributing two fluids separately into and out of the channels 5, 6, wherein the first tunnel 10 includes a wall 18 (Figures 1-2) having through slots communicating with first gaps in the manifold head, wherein the second entry/exit point includes a second wall along planes 15 (Figures 1-2) having through slots communicating with second gaps in the manifold head, and wherein at least one of the inner channel walls 2 is common between the first and second fluids (i.e. channels 5, 6).

Regarding claim 38, Figures 5-6 (marked up, next page) discloses the manifold head is fluidly “sealed” to at least one face of the monolithic structure where the channel openings are located.

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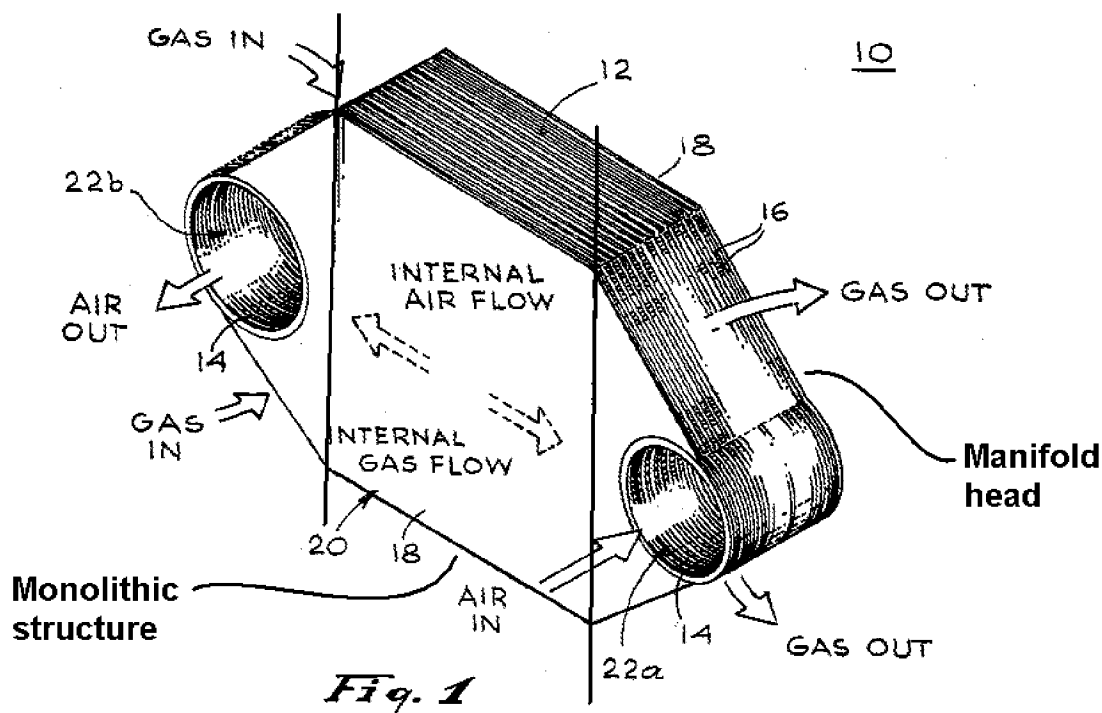


Regarding claim 43, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). The recitation of a “reactor” does not set forth any structural limitation, rather an intended use or working environment to which a device is to be employed. The structure of the manifold system of Holm meets the claim.

Regarding claim 44, the device of Holm having similar structure operates in a manner similar to the method claim.

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Claims 28, 38 and 43-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Morse. Figure 1 (marked up, below) discloses a manifold system comprising a multi-channel monolithic structure including outer structure walls 18, 42 (Figure 8) and inner structure walls 12 defining a plurality of channels with fins 14, 16 spread over an entire cross-sectional area; a manifold head including a first tunnel 22a and a second entry/exit point (Gas Out arrows) distributing two fluids separately into and out of the channels, wherein the first tunnel 22a includes a wall 50 having through slots (at transition 63 (Figure 6) communicating with first gaps in the manifold head, wherein the second entry/exit point includes a second wall along angled planes (Figures 1-2 and 4) having through slots communicating with second gaps in the manifold head, and wherein at least one of the inner channel walls 12 is common between the first and second fluids (Figure 8).



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Regarding claim 38, Figure 1 (marked up, previous page) discloses the manifold head is fluidly “sealed” to at least one face of the monolithic structure where the channel openings are located.

Regarding claim 43, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). The recitation of a “reactor” does not set forth any structural limitation, rather an intended use or working environment to which a device is to be employed. The structure of the manifold system of Morse meets the claim.

Regarding claim 44, the device of Morse having similar structure operates in a manner similar to the method claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holm or Morse.

Holm or Morse discloses all the claimed limitations except a catalytic coating.

The Examiner takes Official Notice of a catalytic coating for their use in the reactor art and would be within the level of ordinary skill in the art.

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Claims 29, 36-37 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morse in view of Dahlgren.

The device of Morse lacks an inner opening in the end cover plates.

Dahlgren discloses a heat exchanger comprising two manifold systems, one of which comprises at least three dividing plates 6 and end cover plates 6 (i.e. outermost plates), each including an inner opening 7 for the purpose of facilitating fluid coupling and plumbing with another unit.

Since Morse and Dahlgren are both from the same field of endeavor and/or analogous art, the purpose disclosed by Dahlgren would have been recognized in the pertinent art of Morse.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Morse an inner opening in each end cover plate for the purpose of facilitating fluid coupling and plumbing with another unit as recognized by Dahlgren.

Regarding claim 36, Figures 1, 3 and 5 of Dahlgren disclose a seal plate 10 having a plurality of holes 15 that are fluidly “sealed” with three parallel dividing plates 6.

Regarding claim 37, Figure 1 of Morse discloses the manifold head, which is formed by at least three parallel dividing plates 12 (Figure 5) is fluidly “sealed” to at least one face of the monolithic structure where the channel openings are located.

Regarding claim 41, Figures 1 and 5 of Dahlgren disclose a sealing ring 11 and two different types (i.e. different opening sizes) of end cover plates (i.e. outermost plates 6, 8).

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Claims 31-32, 34-35 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morse in view of Veltkamp.

The device of Morse lacks a hole plate between the manifold head and monolithic structure.

Veltkamp (Figures 4-5) discloses a manifold system comprising a manifold head 9, monolithic structure 1 and a hole plate 7 there between for the purpose of providing a chessboard flow pattern to improve heat transfer (column 1, lines 49-55).

Since Morse and Veltkamp are both from the same field of endeavor and/or analogous art, the purpose disclosed by Veltkamp would have been recognized in the pertinent art of Morse.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Morse a hole plate between the manifold head and monolithic structure for the purpose of providing a chessboard flow pattern to improve heat transfer as recognized by Veltkamp.

Regarding claim 35, Figure 2 of Veltkamp discloses obliquely oriented channel walls. The specific angle is considered to be an obvious design choice, producing no new and/or unexpected results.

Claims 39 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morse in view of Dahlgren as applied to claims 29, 36-37 and 41 above, and further in view of Veltkamp, as applied to claims 31-32, 34-35 and 45 above.

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Regarding claim 46, Dahlgren (column 2, lines 58-62) a plurality of manifold systems may be employed, wherein a plurality of four would read on a “row of stacks.”

Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morse in view of Dahlgren as applied to claims 29, 36-37 and 41 above, and further in view of Albertsen.

The combined teachings of Morse and Dahlgren lacks a plurality of rows of manifold systems.

Albertsen (Figure 8) discloses a block comprising a plurality of manifold systems U, V, W arranged in a plurality of rows for the purpose of increasing the heat exchange capacity.

Since Morse and Albertsen are both from the same field of endeavor and/or analogous art, the purpose disclosed by Albertsen would have been recognized in the pertinent art of Morse.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ the device of Morse with a plurality of manifold systems arranged in a plurality of rows for the purpose of increasing the heat exchange capacity as recognized by Albertsen.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morse in view of Dahlgren and Veltkamp as applied to claims 39 and 46 above, and further in view of Albertsen, as applied to claim 42 above.

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Response to Arguments

The rejections under 35 U.S.C. 112, second paragraph, are withdrawn in light of the claim amendments.

The rejections in view of Kurihara and Lowenstein et al are withdrawn in light of the claim amendments.

Applicants' arguments have been considered but are moot in view of the new ground(s) of rejection.

No further comments are deemed necessary at this time.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Swann can be reached on (571) 272-7075. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ Leonard R. Leo /
PRIMARY EXAMINER
ART UNIT 3785

February 28, 2011